

## CLAIMS

1) A method of forming a tobacco bead by means of a forming conveyor (3) for conveying the tobacco bead (2);  
5 a pressing device (11) for compacting portions (14), equally spaced with a given spacing (15), of the tobacco bead (2) conveyed on the forming conveyor (3); and a shaving device (21) coordinated with the forming conveyor (3) and for removing a surplus tobacco portion (22) off the tobacco bead (2); the method providing for regulating a first distance (D2) between said shaving device (21) and said forming conveyor (3) as a function of the characteristics of the tobacco bead (2); and the method being characterized by estimating a linear travelling speed (VL) of the forming conveyor (3), and regulating a second distance (D1) between said pressing device (11) and said forming conveyor (3) as a function of said linear travelling speed (VL) of the forming conveyor (3).

2) A method as claimed in Claim 1, and further  
20 reducing said second distance (D1) alongside an increase  
in said linear travelling speed (VL) of the forming  
conveyor (3).

3) A method as claimed in Claim 1, and further regulating said second distance (D1) substantially independently of said first distance (D2).  
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4) A method as claimed in Claim 3, and further regulating said first distance (D2) by means of a first actuator (36), and regulating said second distance (D1)

by means of a second actuator (19) independent of said first actuator (36).

5) A method as claimed in Claim 1, and further estimating the linear travelling speed (VL) of said forming conveyor (3) by direct measurement of the linear travelling speed (VL).

6) A method as claimed in Claim 1, and further estimating the linear travelling speed (VL) of said forming conveyor (3) by measuring a physical quantity related to the linear travelling speed (VL).

7) A method as claimed in Claim 6, and further estimating the linear travelling speed (VL) of said forming conveyor (3) by means of a measurement of said tobacco bead (2).

15 8) A method as claimed in Claim 7, and further estimating the linear travelling speed (VL) of said forming conveyor (3) by measuring a height (H) of said tobacco bead (2).

9) A method of forming a tobacco bead by means of a forming conveyor (3) for conveying the tobacco bead (2); a pressing device (11) for compacting portions (14) of the tobacco bead (2) equally spaced with a given spacing (15); and a shaving device (21) coordinated with said forming conveyor (3) and for removing a surplus tobacco portion (22) off the tobacco bead (2); the method providing for regulating a first distance (D2) between the shaving device (21) and the forming conveyor (3) as a function of the characteristics of the tobacco bead (2);

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and the method being characterized by regulating a second distance (D1) between the pressing device (11) and the forming conveyor (3), and regulating the second distance (D1) independently of the first distance (D2).

5 10) A method as claimed in Claim 9, and further regulating said first distance (D2) by means of a first actuator (36), and regulating said second distance (D1) by means of a second actuator (19) independent of said first actuator (36).

10 11) A method as claimed in Claim 9, and further estimating a linear travelling speed (VL) of the forming conveyor (3), and regulating a second distance (D1) between said pressing device (11) and said forming conveyor (3) as a function of said linear travelling speed (VL) of the forming conveyor (3).

15 12) A method as claimed in Claim 11, and further reducing said second distance (D1) alongside an increase in said linear travelling speed (VL) of the forming conveyor (3).

20 13) A method as claimed in Claim 11, and further estimating the linear travelling speed (VL) of said forming conveyor (3) by direct measurement of the linear travelling speed (VL).

25 14) A method as claimed in Claim 11, and further estimating the linear travelling speed (VL) of said forming conveyor (3) by measuring a physical quantity related to the linear travelling speed (VL).

15) A method as claimed in Claim 14, and further

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estimating the linear travelling speed (VL) of said forming conveyor (3) by means of a measurement of said tobacco bead (2).

16) A method as claimed in Claim 15, and further  
5 estimating the linear travelling speed (VL) of said forming conveyor (3) by measuring a height (H) of said tobacco bead (2).

17) A method as claimed in Claim 15, and further  
10 estimating the linear travelling speed (VL) of said forming conveyor (3) by measuring the density of said tobacco bead (2).

18) A method as claimed in Claim 15, and further  
estimating the linear travelling speed (VL) of said forming conveyor (3) by measuring the mass of tobacco per  
15 unit of length of said tobacco bead (2).

19) A method as claimed in Claim 9, and further  
measuring the density of said tobacco bead (2), and  
regulating said second distance (D1) as a function of  
said density of the tobacco bead (2).

20) A method as claimed in Claim 19, and further  
increasing said second distance (D1) alongside an  
increase in said density of the tobacco bead (2).

21) A method as claimed in Claim 9, and further  
measuring, downstream from said shaving device (21), a  
25 mass of tobacco per unit of length of said tobacco bead  
(2), and regulating said second distance (D1) as a  
function of said mass of tobacco per unit of length of  
the tobacco bead (2).

22) A method as claimed in Claim 21, and further increasing said second distance (D1) alongside an increase in said mass of tobacco per unit of length of the tobacco bead (2).

5 23) A method as claimed in Claim 9, and further measuring a height (H) of said tobacco bead (2), and regulating said second distance (D1) as a function of said height (H) of the tobacco bead (2).

10 24) A method as claimed in Claim 23, and further increasing said second distance (D1) alongside a reduction in said height (H) of the tobacco bead (2).

15 25) A unit for forming a tobacco bead, the unit (1) comprising a forming conveyor (3) for conveying the tobacco bead (2) at a given linear speed (VL); a pressing device (11) for compacting portions (14), equally spaced with a given spacing (15), of the tobacco bead (2); a shaving device (21) coordinated with said forming conveyor (3) and for removing a surplus tobacco portion (22) off the tobacco bead (2); and first regulating means (36) for regulating a first distance (D2) between the shaving device (21) and the forming conveyor (3) as a function of the characteristics of the tobacco bead (2); and the unit (1) being characterized by comprising second regulating means (19) for regulating a second distance (D1) between the pressing device (11) and the forming conveyor (3) substantially independently with respect to said first regulating means (36).

26) A unit as claimed in Claim 25, wherein said

first regulating means (36) comprise a first actuator (36), and said second regulating means (19) comprise a second actuator (19) independent of the first actuator (36).

5        27) A unit as claimed in Claim 25, and further comprising estimating means (38) for estimating a linear travelling speed (VL) of the forming conveyor (3); said second regulating means (19) regulating said second distance (D1) as a function of said linear travelling  
10      speed (VL) of the forming conveyor (3).

15        28) A unit as claimed in Claim 27, and further comprising sensor means (41) for measuring said linear travelling speed (VL) of the forming conveyor (3); said estimating means (38) being connected to the sensor means (41) to estimate the linear travelling speed (VL) of said forming conveyor (3) by direct measurement of the linear travelling speed (VL).

20        29) A unit as claimed in Claim 27, and further comprising further sensor means (40; 42) for measuring a physical quantity related to said linear travelling speed (VL) of the forming conveyor (3); said estimating means (38) being connected to the further sensor means (40; 42) to estimate the linear travelling speed (VL) of said forming conveyor (3) by means of the measurement of said  
25      physical quantity related to the linear travelling speed (VL).

30) A unit as claimed in Claim 29, wherein said further sensor means (40; 42) effect a measurement of

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said tobacco bead (2).

31) A unit as claimed in Claim 30, wherein said further sensor means (42) measure a vertical height (H) of said tobacco bead (2).

5 ~~32~~) A unit for forming a tobacco bead, the unit (1) comprising a forming conveyor (3) for conveying a tobacco bead (2); and a shaving device (21) coordinated with said forming conveyor (3) to remove a surplus tobacco portion (22) off the tobacco bead (2), and comprising two 10 mutually cooperating, rotary shaving disks (23); the unit (1) being characterized in that the shaving device (21) comprises a frame supporting two independent electric motors (32), each of which comprises a respective shaft (29) supporting and operating a respective said shaving 15 disk (23); and a control unit (38) for activating the two said electric motors (32) to impart a respective given angular speed to each said shaving disk (23).

20 33) A unit as claimed in Claim 32, wherein control unit (38) activates the two said electric motors (32) to impart the same angular speed to said shaving disks (23).

34) A unit as claimed in Claim 32, wherein said control unit (38) activates the two said electric motors (32) to impart two different angular speeds to said shaving disks (23).

25 35) A unit as claimed in Claim 32, and further comprising first sensor means for determining the density of the tobacco in said tobacco bead (2); said control unit (38) activating the two said electric motors (32) to

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impart to each said shaving disk (23) a respective given angular speed which is a function of said density of the tobacco.

36) A unit as claimed in Claim 32, and further  
5 comprising second sensor means (41) for determining the linear travelling speed (VL) of said forming conveyor (3); said control unit (38) activating the two said electric motors (32) to impart to each said shaving disk (23) a respective given angular speed which is a function  
10 of said linear travelling speed (VL).

37) A unit as claimed in Claim 32, and further comprising third sensor means (40) for determining the mass of tobacco per unit of length of said tobacco bead (2); said control unit (38) activating the two said  
15 electric motors (32) to impart to each said shaving disk (23) a respective given angular speed which is a function of said mass of tobacco per unit of length of said tobacco bead (2).

38) A unit as claimed in Claim 32, and further  
20 comprising a pressing device (11) for compacting portions (14) of the tobacco bead (2) equally spaced with a given spacing (15); said pressing device (11) comprising a lobed wheel (11), and a further electric motor (17) for rotating the lobed wheel (11) at a given angular speed  
25 (VA).

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